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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|-----------------|-------------|----------------------|---------------------|------------------|
| 09/489,954 | 01/24/2000 | Pierre C. Fazan | 303.434US2 | 6507 |

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EXAMINER

KANG, DONGHEE

ART UNIT PAPER NUMBER

2811

DATE MAILED: 11/06/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/489,954

Applicant(s)

FAZAN ET AL.

Examiner

Donghee Kang

Art Unit

2811

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 22 August 2002.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 39-41, 44-56, 88, 89 and 93-116 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 56, 88, 89 and 112-116 is/are allowed.
- 6) ☒ Claim(s) 39-41, 47-53, 55, 93, 94, 98-107 and 109-111 is/are rejected.
- 7) ☒ Claim(s) 44-46, 54, 95-97 and 108 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☒ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other:

DETAILED ACTION

Remarks

1. Applicant's Amendment and Response to Paper No.18 has been entered and made of Record. New claims 93-116 have added. Therefore, claims 39-41, 44-56, 88-89, and 93-116 are pending in this application.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

3. Claims **39-41, 47-53, 55, 93-94, 98-107, and 109-111** are rejected under 35 U.S.C. 102(e) as being anticipated by Takenaka (US 5,293,510).

Regarding claims **39, 48 & 51**, Takenaka discloses a dynamic random access memory device comprising (Fig.1):

a capacitor which comprises:

a first portion (32) formed in an insulative layer (27 & 28) having an upper surface; a second portion (31) overlying the first portion (32), wherein said insulative layer surrounds a sidewall of said second portion and said second portion does not extend above the upper surface; and a third portion (30) overlying said second portion (31) and, extending above and below said upper surface of said insulative layer, and

including a recess, wherein said first portion and said second portion are different materials. See also Col.4, line 42 – Col.5, line 30.

Regarding claims **40, 49 & 52**, Takenaka discloses the second portion and the third portion are different.

Regarding claim **41**, Takenaka discloses the first portion and the third portion are different.

Regarding claims **47**, Takenaka discloses the insulative layer surrounds a lower sidewall of said third portion.

Regarding claims **50 & 53**, Takenaka discloses the first portion and the second portion are different materials.

Regarding claim **55**, Takenaka discloses the dynamic random access device further comprising a transistor.

Regarding claims **93, 100 & 105**, Takenaka discloses a dynamic random access memory device comprising (Fig.1):

a capacitor which comprises:

a first portion (32) formed in an insulative layer (27 & 28) having an upper surface; a second portion (31) overlying the first portion (32) and having a sidewall substantially flush with the upper surface; and a third portion (30) overlying said second portion (31) and, extending above and below said upper surface of said insulative layer, and including a recess, wherein the first portion and the second portion are different materials.

Regarding claims **94, 101 & 106**, Takenaka discloses the second portion and the third portion are different.

Regarding claims **98**, Takenaka discloses the insulative layer surrounds a sidewall of the third portion.

Regarding claims **99, 104 & 111**, Takenaka discloses the insulative layer surrounds the sidewall of the second portion.

Regarding claims **102 & 107**, Takenaka discloses the first portion and the third portion are different materials.

Regarding claims **103 & 110**, Takenaka discloses the first portion contacts the second portion, and the second portion contacts the third portion.

Regarding claim **109**, Takenaka discloses the dynamic random access device further comprising a transistor.

Allowable Subject Matter

4. Claims **44-46, 54, 95-97 & 108** are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

5. Claims **56, 88-89 & 112-116** are allowed.

6. The following is a statement of reasons for the indication of allowable subject matter and reasons for allowance:

Takenaka teaches an electrode comprising a first portion in an insulative layer having an upper surface, a second portion, wherein said insulative layer surrounds a

sidewall of said second portion and a third portion extending above and below said upper surface of said insulative layer, and including a recess. However, Takenaka fails to teach or suggest the first portion is silicon contact, the second portion is a diffusion barrier layer, and the third portion is an oxidation resistant layer.

One of ordinary skill in the art would not have been motivated to modify the teaching of Takenaka to meet the claimed limitations as set forth in the present claimed invention.

Response to Arguments

7. Applicant's arguments with respect to claims 39-41, 47-53, 55, 93-94, 98-107, and 109-111 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

8. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of

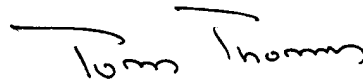
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the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Donghee Kang whose telephone number is 703-305-9147. The examiner can normally be reached on Monday through Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Tom Thomas can be reached on 703-308-2772. The fax phone numbers for the organization where this application or proceeding is assigned are 703-308-7722 for regular communications and 703-308-7722 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0956.



TOM THOMAS
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2800

DHK
October 30, 2002